fresh quantities of alcohol and a scrubbing brush. The poisonous oil may be thus removed in alcoholic solution. Another way of proceeding would be to wash the exposed parts with an alcoholic solution of lead acetate; in this case the poisonous principle would be first transformed in its insoluble lead compound and then washed away with alcohol.

The washing must be done thoroughly when alcohol is employed, as otherwise the alcohol might only serve to distribute the oil more widely over the skin. The finger nails should be cut short and also perfectly cleaned with the scrubbing brush. Oily preparations, or anything which dissolves the poisonous oil, if used, should be immediately removed, as they may only spread the poison, giving it a larger area on which to work.

The treatment above outlined can not cure the already inflamed parts which must heal by the usual process of repair, but it does prevent the spreading of the inflammation and may serve to remove the poison before it has had time to produce its characteristic effects upon the skin.

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## NOTES ON SPOROBOLUS.[1]

Elmer D. Merrill.

Sporobolus depauperatus (Torr.) Scribn. Bull. Torr. Bot. Club. **10**: 63. 1883.

*Vilfa squarrosa* Trin. Agrost. **1**: 78. 1840.

*Vilfa depauperata* Torr. in Hook. Fl. Bor. Am. **2**: 257. *t.* 236. 1840.

There has been little confusion regarding this species owing to the fact that Hooker's excellent plate leaves no doubt as to the identity of the species. In the field this species is very distinct and at once recognized by its densely tufted habit, and prostrate culms which are seldom 1 dm. high, and much stouter than in *Sporobolus richardsonii*.

The type locality of *Vilfa depauperata* is "Hab. N. W. America,

[1] See also Nash, Bull. Torr. Bot. Club, **22**: 464, 465, Bot. Gaz. **21**: 155; Scribner, Bot. Gaz. **21**: 14, 15.

barren sandy parts of the Columbia from Menzies' Island upward. Douglas"; that of *Vilfa squarrosa* is "America septentr. in Ins. Menzies (Hooker)." Both *Vilfa depauperata* and *V. squarrosa* were published during the same year and evidently based on the same material and as it is impossible to determine which species has the priority of publication Hooker's name has been retained, as it is the one now in use by American botanists.

The range of this species is in dry open, often alkaline soils, from Montana to New Mexico, west to California and Washington.

*Sporobolus depauperatus* (?) Scribn. Bull. Torr. Bot. Club, 9: 103. 1882, is *Muhlenbergia dumosa* Scribn.

SPOROBOLUS **richardsonii** (Trin.) n. comb.

*Vilfa richardsonis* Trin. Agrost. 1: 81. 1840.

*Muhlenbergia aspericaulis* Nees, l. c., as syn.

*Sporobolus aspericaulis* Scribn. Bot. Gaz. 21: 15. 1896.

*Sporobolus depauperatus filiformis* Beal, Grasses N. A. 2: 296. 1896.

*Sporobolus brevifolius* Nash, Bull. Torr. Bot. Club, 22: 464. 1895; Britt. & Br. Illus. Fl. 1: 153. *fig. 346.* 1896; Ryd. Mem. N. Y. Bot. Gard. 1: 28. 1900; Britton, Manual 105. 1901, not *Agrostis brevifolia* Nutt.

There has been much confusion regarding this form and various authors have expressed differing opinions regarding it. From a careful study of synonymy, descriptions of species and specimens, and examination of spikelets from Trinius' type of *Vilfa richardsonis* from the herbarium of the St. Petersburg Academy, I have come to the conclusion that Trinius' name is the earliest available one for this form which is a valid species, although presenting forms which intergrade with *Sporobolus depauperatus* (Torr.) Scribn. It is recognized by its scarcely tufted habit, erect slender culms which are much taller than in *Sporobolus depauperatus* and never prostrate as in that species, and which are minutely but distinctly punctate, and in its somewhat longer, more acute spikelets.

The type locality of *Vilfa richardsonis* Trin. is "Amer. boreal. (Richardson)."

The distribution of this species is in meadows, river bottoms, etc., from Anticosti Island and Maine to British Columbia, south to Nebraska, New Mexico, and California.

SPOROBOLUS BREVIFOLIUS (Nutt.) Scribn. Mem. Torr. Bot. Club, **5**: 39. 1893.

*Agrostis brevifolia* Nutt. Gen. **1**: 48. 1818.

*Vilfa cuspidata* Torr. in Hook. Fl. Bor. Am. **2**: 238. 1840.

*Vilfa gracilis* Trin. Agrost. **1**: 82. 1840, not *V. gracilis* Trin. l. c. 52.

*Sporobolus cuspidatus* Scribn. Bull. Torr. Bot. Club, **10**: 63. 1883.

There has been much confusion regarding the synonymy of this species owing to the fact that there was some uncertainty as to the identity of *Agrostis brevifolia* Nutt. Through the courtesy of Mr. Stewardson Brown, curator of the Botanical Section of the Philadelphia Academy of Natural Sciences, I have been able to examine Nuttall's type of *Agrostis brevifolia* and find it to be identical with *Vilfa cuspidata* Torr., which being a later name becomes a synonym of *Sporobolus brevifolius* (Nutt.) Scribn. *Sporobolus brevifolius* Nash, Bull. Torr. Bot. Club. **22**: 464. 1895, is *Sporobolus richardsonii.*

The type locality of *Agrostis brevifolia* Nutt. is "Hab. In sterile naked plains and argillaceous soils, near Fort Mandan on the Missouri"; that of *Vilfa cuspidata* is "Hab. Banks of the Saskatchawan, near the Rocky Mountains, Drummond, Plains of the Red River, Douglas"; while that of *Vilfa gracilis* Trin. is "Amer. Boreal.? (Hooker)." There is in the U. S. National Herbarium a portion of Trinius's specimen of *Vilfa gracilis* from the herbarium of the St. Petersburg Academy, which is certainly the same as Nuttall's *Agrostis brevifolia.*

The range of this species is in dry open soils from Wisconsin, Iowa, and Nebraska, west to Nevada and Montana.

SPOROBOLUS FILIFORMIS (Thurb.) Rydb. Contr. U. S. Nat. Herb. **3**: 189. 1895; Scribn. U. S. Dept. Agr. Div. Agros. Bull. **17**: 173. *fig. 469.* 1899.

*Vilfa depauperata filiformis* Thurb. in U. S. Geol. Explor. 40th Par. **5**: 376. 1871.

*Vilfa gracillima* Thurb. in S. Wats. Bot. Calif. **2**: 268. 1880.

*Sporobolus gracillimus* Vasey, Descr. Cat. 44. 1885.

This species is fairly distinct, presenting intergrading forms with *Sporobolus simplex* Scribn., in general, however, being distinguished by its more slender, taller culms and mostly awnless spikelets. Its

range is on sandy shores, light, moist or rather dry soils, etc., from Nebraska and South Dakota to California and Washington.

SPOROBOLUS SIMPLEX **thermale** var. nov. A rather robust annual 2.5 to 3 dm. high, with numerous, short plane leaves about 2 mm. wide, and purplish, exserted, rather densely flowered, almost spikelike panicles 2.5 to 4 cm. long, 3 to 4 mm. in diameter. Spikelets 2 mm. long, the flowering glume scabrous, acute, mostly awnless.

Type specimen collected on the margin of a stream of hot water, Lolo Hot Springs, Montana, 302a David Griffiths, Sept. 17, 1898. No. 302 Griffiths, same locality and date, is also referred here.

This variety could with equal propriety be referred to *Sporobolus filiformis* (Thurb.) Rydb., but is distinguished from both *Sporobolus filiformis* and *S. simplex* by its more robust habit, and densely flowered panicles. In its awnless flowering glumes it approaches nearer the former although in general aspect it resembles *Sporobolus simplex*, but lacks the awned flowering glumes of that species.

SPOROBOLUS ARISTATUS Rydb. Bull. Torr. Bot. Club. **28**: 266. 1901.

In his description of this species Dr. Rydberg cites three specimens, 2196 and 27 Tweedy from Wyoming, and 1281 S. Watson from Utah. We have had access to the two latter numbers and after a most minute examination of those specimens we have been unable to distinguish this species from *Sporobolus simplex* Scribn. and must consider it only a depauperate form of that species. The presence of an awn to the flowering glume is an exceedingly variable character, and even in the type of *Vilfa depauperata filiformis* Thurb. (*Sporobolus filiformis* Rydb.) awned and unawned spikelets are found on the same plant.

SPOROBOLUS **gracilis** (Trin.) n. comb.

*Vilfa gracilis* Trin. Agrost. **1**: 52. 1840; not Trin. l. c., 82.

*Vilfa subsetacea* Trin. l. c., Arabic 111.

*Agrostis juncea* Michx. Fl. Bor. Am. **1**: 52. 1803, not Lam. Encycl. **1**: 60. 1783.

*Heleochloa juncea* Beauv. Agrost. 24. 1812.

*Colpodium junceum* Trin. in Spreng. Neue. Entd. **2**: 37. 1821.

*Sporobolus junceus* Kunth, Rev. Gram. **1**: 68. 1835.

*Sporobolus ejuncidus* Nash in Britt. Manual 106. 1901.

There are in the U. S. National Herbarium spikelets from Trinius's type of *Vilfa gracilis* from the St. Petersburg Academy, the type locality of which is "Carolina." It is very evident from examination of these

spikelets and Trinius's description that his *Vilfa gracilis* is identical with *Agrostis juncea* of Michaux, although on the following page of the same work Trinius considers *Vilfa juncea* (Michx.) as a distinct species, evidently, however, basing his description mainly on South American material which was probably not the true *Agrostis juncea* of Michaux. Through an error Trinius published a second species of *Vilfa* under the specific name *gracilis* in the same work, page 82, which, however, is a synonym of *Sporobolus brevifolius* (Nutt.) Scribn. In indexing this volume Trinius discovered his error and applied a new name *Vilfa subsetacea*, page 111, to his first *Vilfa gracilis* rather than to the second and hence *Vilfa subsetacea* becomes a synonym of *Sporobolus gracilis*. In Britton's Manual Mr. Nash applied the name *Sporobolus ejuncidus* to this species, owing to the fact that the name *Sporobolus junceus* was untenable because Michaux's original publication of the species sub *Agrostis*, was antedated by *Agrostis junceus* Lam. According to the above note this name becomes a synonym, as the species already had two available names, *Vilfa gracilis* and *Vilfa subsetacea*.

Washington, D. C.

## MISCELLANEOUS NOTES ON NEW ENGLAND FERNS, — IV.

George E. Davenport.

Note 7. The Evergreen Ferns of New England.— A winter study. This note is intended as a guide to the study of those ferns which remain green, or nearly so, through the winter and early spring, when the frequently occurring intervals of mild weather afford numerous opportunities for studying them to advantage.

With the disappearance of the late autumn foliage from the hills and woodlands, the rocky ledges stand out in bolder relief, exposing to view the great masses of polypody that fringe the boulders with their dark green fronds; the marginal shield ferns that crouch low at their bases for shelter, and the tiny spleenworts that have been hiding away securely in the crevices of the cliffs through all the summer season. In the woodland swamps, when free from snow, the